Service Instructions
Microphone Amplifier

Consisting of:

Meter Circuit	2603.1
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Removal of the Metal Case

After removing the four threaded retainers at the back of the instrument, it is possible to slide the chassis and the front panel out of the case.

Trouble Shooting

If the reason for a fault is not an obvious one such as a dead tube, broken down resistor, blown or disconnected fuse etc., then first test the voltages of all the tubes and compare them with the voltages shown in the circuit diagram in order to localize the defect. Should this method of finding the fault prove unsuccessful, then check the instrument by adopting the method described in the adjustment procedure. When the trouble has been found and remedied, the voltages and adjustments which are influenced by the remedy must be rechecked.

The tolerances stated in the instructions can only be used as a guide for adjustment and control, but any deviations must not be corrected without being sure that the tolerances of the instruments used for making the adjustment are so small as to have no influence on the measurements.

The instructions in this Manual are given purely as a guide to the service of equipment. Some faults, as f.i. small deviations in tolerances require for their correction special control equipment and extensive experience, and in these cases it is necessary to send the instrument to the factory.

Instruments and accessories necessary for service and repair:

Multimeter (50 μA)
Frequency Analyzer type 2107
Beat Frequency Oscillator type 1022
Pistonphone type 4220
Cathode Follower type 2612/2613
Condenser Microphone type 4131/32

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Meter Circuit 2603.1

valid from serial no. 67708

2604
2107

1.1. Mechanical Zero-Point

METER SWITCH: "Off"
POWER: "Off."

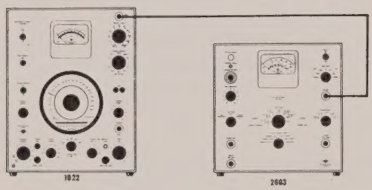
Adjust for zero deflection.

1.2. Electrical Zero-Point

METER RANGE: "10 V"
RANGE MULT.:"X 1"
POWER: "On"

Check that the instrument is still at zero deflection.

Tolerance: "1/2 pointer width".



1.3. Check of Meter Switch

a. METER SWITCH: "RMS fast"
POWER:"Off."

Frequency: 1000 c/s. Adjust the input voltage for a 16 dB deflection on type 2603.

b. METER SWITCH to "Average fast"

Deflection on type 2603: 14.9-15.3 dB.
If necessary adjust P6.

c. METER SWITCH to "Peak fast"

Deflection on type 2603: 18.5-19.5 dB.
If necessary adjust P6 and repeat item b.

Also check a-b-c at 20 c/s in pos. "fast"
20.000 c/s " " "

1.4. Sensitivity

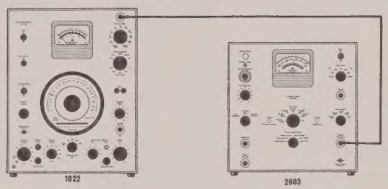
METER SWITCH: "RMS fast"
POWER: "Off"

Frequency: 1000 c/s. Adjust the input voltage for a full scale deflection on type 2603. The input voltage from type 1022 should be with 8-11 V.

Output Amplifier

valid from serial no. 192197

2603.2



2.1. Sensitivity

a. RANGE MULT.:"X 1"
METER SWITCH: "RMS"
INPUT SWITCH: "Direct"
FREQ.RESP.SWITCH: "Ext.filter"
POWER ON

Input signal: 1 V. 1000 c/s.

Deflection on type 2603: app. 10 V.

If not check item: 3.6.

2.2. Range Multiplier

INPUT SWITCH: "Direct"
METER SWITCH: "RMS"
RANGE MULT."X 1"
FREQ.RESP.SWITCH: "Ext.filter"

Frequency: 1000 c/s. Adjust the input voltage for an 18 dB deflection on type 2603.

Check the steps of RANGE MULT. by comparison to type 1022.

Tolerance: $\pm$ 0.2 dB (+ tolerance of type 1022: 0.2 dB)

Possible reasons for fault: defective tube V 4
" capacitor C 2.

2.3. Frequency Response. Check

a. INPUT SWITCH: "Direct"
METER SWITCH:"RMS"
RANGE MULT.:"X 1"
FREQ.RESP.SWITCH:"Ext.filter"

The apparatus must be placed in its case or in other way effectively screened.

Frequency: 1000 c/s. Adjust the input voltage for an 18 dB deflection on type 2603.

Vary the frequency from 20–20.000 c/s and check the deflection on type 2603.

Tolerance: $\pm$ 0.2 dB (+ tolerance of type 1022: 0.3 dB)

2.4. Frequency Response. Adjustment

a. INPUT SWITCH: "Direct"
METER SWITCH: "RMS"
RANGE MULT.:"X 0.3"
FREQ.RESP.SWITCH: "Ext.filter"

Frequency: 1000 c/s. Adjust the input voltage for an 18 dB deflection on type 2603.

Change frequency to 20.000 c/s and adjust C 41 for an 18 dB deflection on type 2603.

b. RANGE MULT. to X 0.1

as item a, but adjust C 43 for an 18 dB deflection on type 2603.

Possible reasons for fault: defective tubes V 4 – V 5 – V 16.

Whenever V 5 or V 16 is replaced, P 24 should be adjusted to V_k triode (pin 8, V 16) is 125 V d.c.

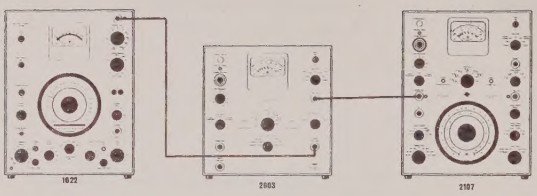
2.5. Output Impedance

INPUT SWITCH: "Direct"
METER SWITCH: "Peak"
RANGE MULT.:"X 1"
FREQ.RESP.SWITCH: "Ext.filter"

Frequency: 1000 c/s. Adjust the input voltage for a 20 dB deflection on type 2603.

When loading the RECORDER socket with a resistor of 1000 Ω the deflection should be within 19.5 – 20 dB.

If necessary adjust P 24 or change V 16 and check d.c. voltage on V 16 pin 8: 110–140 V.



2.6. Output Voltage

a. INPUT SWITCH:"Direct"
METER SWITCH: "RMS"
RANGE MULT.:"X 0.3"
FREQ.RESP.SWITCH:"Ext.filter"

Frequency: 1000 c/s. Adjust the input voltage for a 20 dB deflection on type 2603.

Output voltage on the RECORDER socket: 8-11 V.

b. METER SWITCH to "Off"

If the input voltage is increased by 10dB the output voltage should increase by 9.7 - 10.3 dB.

2.7. Noise - Hum.

a. INPUT SWITCH: "Direct"
RANGE MULT.:"X 1"
FREQ.RESP.SWITCH: "Ext.filter"
METER SWITCH: "RMS"

The apparatus must be placed in its case or in other way effectively screened.

Disconnect type 1022 and measure hum at line frequency and 2nd and 3rd harmonic.

Tolerance: max. 5 mV hum
max. 10 mV noise

b. RANGE MULT. to "X 0.01"

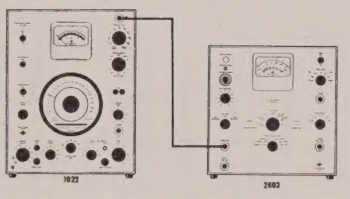
Tolerance: max. 10 mV hum
max. 20 mV noise

Possible reasons for fault: defective tube V4.

Input Amplifier

valid from serial no. 110125

2603.3



3.1. Meter Range

INPUT SWITCH:"Direct"
METER RANGE: "10 V"
FREQ.RESP.SWITCH:"Lin.20-40.000 c/s"
RANGE MULT.:"X 1"
METER SWITCH:"RMS"

Frequency: 1000 c/s. Adjust the input voltage for an 18 dB deflection on type 2603.

Check the steps of METER RANGE by comparison to type 1022.

Tolerance: $\pm$ 0.2 dB (+ tolerance of type 1022: 0.2 dB)

Possible reasons for fault: defective tubes V 1 - V 2.

3.2. Frequency Response Check

INPUT SWITCH: "Direct"
METER RANGE:"10 V"
FREQ.RESP.SWITCH:"Lin.2-40.000 c/s"
RANGE MULT.:"X 1"
METER SWITCH:"RMS"

Frequency: 1000 c/s. Adjust the input voltage for an 18 dB deflection on type 2603.

Vary the frequency from 20 - 20.000 c/s.

Deflection on type 2603: 18 dB.

Tolerance: $\pm$ 0.3 dB (+ tolerance of type 1022: 0.3 dB)

3.3. Frequency Response. Adjustment.

a. INPUT SWITCH:"Direct"
METER RANGE:"100 mV"
FREQ.RESP.SWITCH:"Lin.2-40.000 c/s"
RANGE MULT.:"X 1"
METER SWITCH: "RMS"

The apparatus must be placed in its case or in otherway effectively screened.

Frequency: 1000 c/s. Adjust the input voltage for a 20 dB deflection on type 2603.

Change frequency to 20.000 c/s and adjust C 42 for a 20 dB deflection on type 2603.

b. METER RANGE to "10V"

As under item a but adjust C 40 for a 20 dB deflection on type 2603.

c. Check all steps of METER RANGE

Vary the frequency from 20-20.000 c/s.

Tolerance: $\pm$ 0.3 dB (+ tolerance of type 1022: 0.3 dB)

3.4. Overload Indicator

INPUT SWITCH: "Direct"
METER RANGE: "1 V"

Input signal: 1 V 1000 c/s.

The indicator should light up if the input voltage increases by 9 - 11 dB.

Also check at frequencies from 20 - 20.000 c/s.

3.5. Output Impedance

INPUT SWITCH:"Direct"
METER RANGE:"10 V"
FREQ.RESP.SWITCH:"Lin.2-40.000 c/s"
RANGE MULT.:"X 0.1"
METER SWITCH:"RMS"

Load the EXT.FILTER INPUT socket with a resistor of 500 Ω in series with a 50 μF capacitor.

Set frequency to 1000 c/s and adjust the input voltage for a 20 dB deflection on type 2603.

When changing the resistor to 50 Ω the deflection on type 2603 should be within 19-20 dB.

3.6. Reference

a. INPUT SWITCH:"Direct"
METER RANGE: "10 V"
RANGE MULT.:"X 1"
METER SWITCH:"RMS"
FREQ.RESP.SWITCH:"Lin.2-40.000 c/s"

Frequency: 1000 c/s. Adjust the input voltage to exactly 10 V.

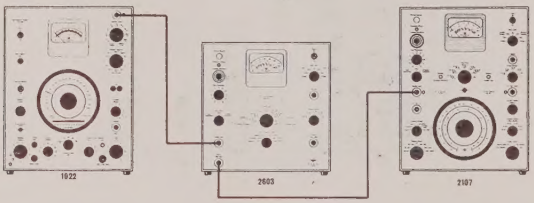
Adjust P 3 SEN.AMPL.INPUT for full scale deflection on type 2603.

b. METER RANGE to "Ref."

Adjust P 1 for deflection to the red line on type 2603.

c. INPUT SWITCH to "Cond.micr."

Adjust P 2 SEN.COND.MICR. for deflection to the red line on type 2603.



3.7. Distortion

INPUT SWITCH: "Direct"
METER RANGE: "10 V"
FREQ.RESP.SWITCH: "Ext.filter"

Distortion down to around 0.5% can be measured by type1022 and type 2107 only. Lower distortion requires the use of a filter type 1607 connected between type 2603 and type 2107 for rejection of fundamental frequency and a filter connected between type 1022 and type 2603 to ensure that the distortion of the input signal is below 0.01%.

If these filters are available check limits.

Adjust the input voltage for 1 V on EXT. FILTER INPUT socket which is loaded with a resistor of 500 Ω in series with a 50 µF capacitor.

Measure distortion at 40 – 1000 – 6500 c/s.

Tolerance: max. 0.1% 2nd harmonic
max. 0.1% 3rd harmonic

3.8. Noise - Hum

a. INPUT SWITCH:"Potentiometer"
METER RANGE: "10 mV"
FREQ.RESP.SWITCH: "Ext.filter"
INPUT POTENTIOMETER: 10

The apparatus must be placed in its case or in other way effectively screened.

Disconnect type 1022 and measure hum at line frequency and 2nd and 3rd harmonic.

Tolerance: max. 200 µV hum
max. 1.5 mV noise

b. INPUT POTENTIOMETER: 0

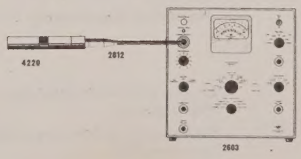
Tolerance: max. 200 µV hum
max. 500 µV noise

Possible reasons for fault: defective tube V 1
" resistor R 31.

3.9. Polarization Voltage

Connect a multimeter to POL.VOLTAGE socket and check the d.c. voltage: 200 V.

If necessary adjust P 4.



3.10. Acoustical Calibration

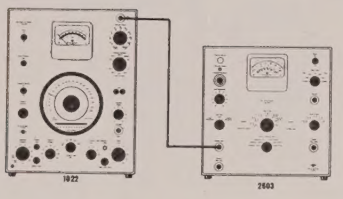
INPUT SWITCH: "Cond.micr."
METER RANGE: "120 dB SL"
FREQ.RESP.SWITCH:"Lin.20-40.000 c/s"
RANGE MULT.:"-10 dB"
METER SWITCH: "RMS fast"

Switch on the pistonphone and adjust P 2 SEN.COND.MICR. until the deflection on type 2603 is equal to the SPL produced by the pistonphone, with, for example, a pistonphone producing 124.1 dB the deflection should be 14.1 dB.

Weighting Network

valid from serial no. 67708

2603.4



4.1. Linear

METER SWITCH: "RMS"
INPUT SWITCH: "Direct"
RANGE MULT.: "X 1"
FREQ.RESP.SWITCH:"Lin.2-40.000 c/s"
METER RANGE: "10 V"

Frequency: 1000 c/s. Adjust the input voltage for an 18 dB deflection on type 2603.

Change frequency to 50 c/s.
Deflection on type 2603: 18 dB.
Tolerance: ± 0.1 dB (+ tolerance of type 1022: 0.3 dB)
If necessary adjust R 99.

Vary the frequency from 20 - 20.000 c/s.
Deflection on type 2603: 18 dB.
Tolerance: ± 0.3 dB (+ tolerance of type 1022: 0.3 dB)

4.2. Curve A-B-C. Check.

a. METER SWITCH: "RMS"
INPUT SWITCH: "Direct"
RANGE MULT.: "X 1"
FREQ.RESP.SWITCH: "Lin.2-40.000 c/s"
METER RANGE: "10 V"

Frequency: 1000 c/s. Adjust the input voltage for an 18 dB deflection on type 2603.

b.

Freq.	Curve "A" Defl.on type 2603	Range Mult.	Curve "B" Defl.on type 2603	Range Mult.	Curve "C" Defl.on type 2603	Range Mult.
c/s	dB		dB		dB	
20	4.6-12.6	X 0.01	10.6-18.6	X 0.1	8.7-16.7	X 1
63	10.4-13.9	X 0.1	7.1-10.6	X 1	15.7-19.2	X 1
500	14.4-15.2	X 1	17.3-18.1	X 1	17.6-18.4	X 1
1000	17.7-18.3	X 1	17.7-18.3	X 1	17.7-18.3	X 1
2000	19.0-19.4	X 1	17.6-18.0	X 1	17.6-18.0	X 1
8000	15.7-17.4	X 1	13.8-15.5	X 1	13.8-15.5	X 1
20.000	6.8-10.3	X 1	15.0-18.5	X 0.3	14.9-18.4	X 0.3

4.3. Curve A-B-C. Adjustment at 1 kc/s.

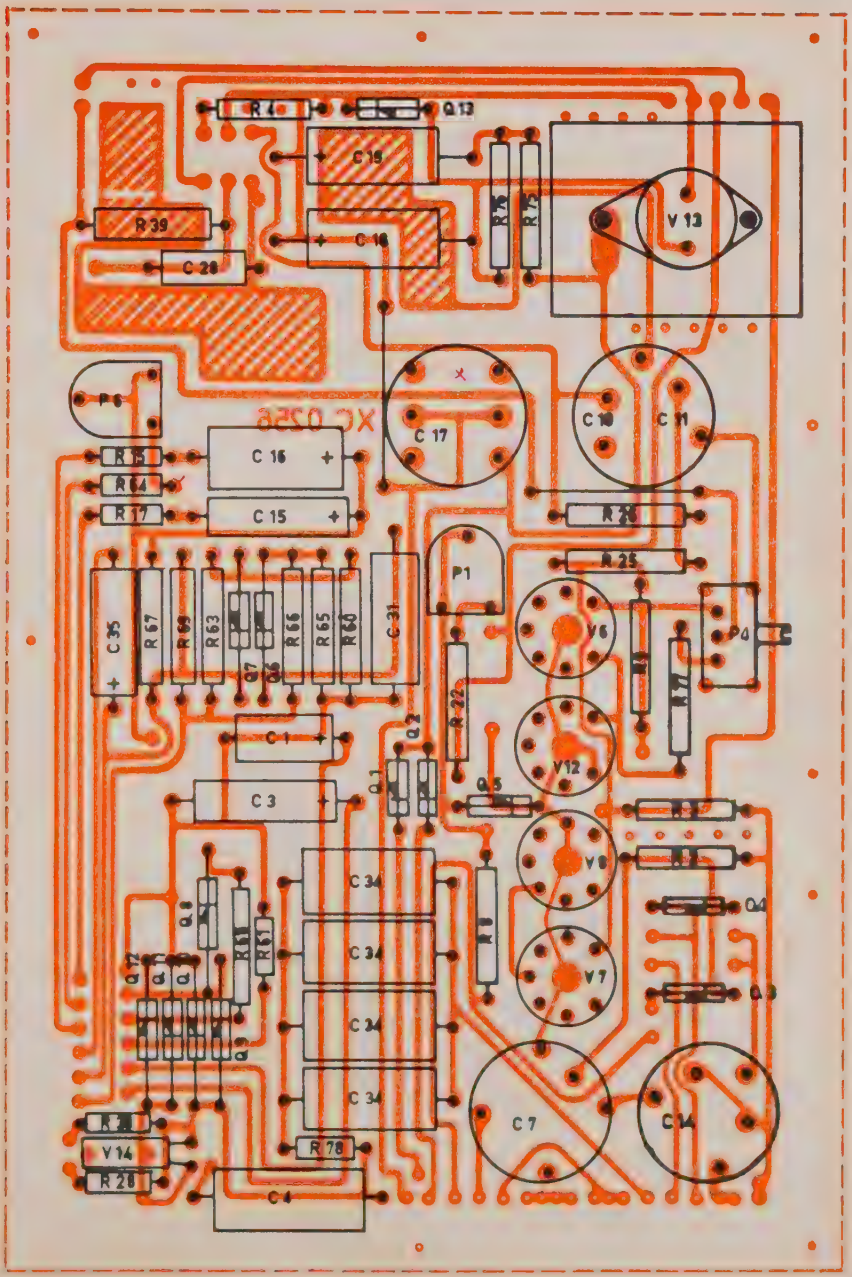
a. METER SWITCH: "RMS"
INPUT SWITCH:"Direct"
RANGE MULT.:"X 1"
FREQ.RESP.SWITCH:"Lin.2-40.000 c/s"
METER RANGE: "10 V"

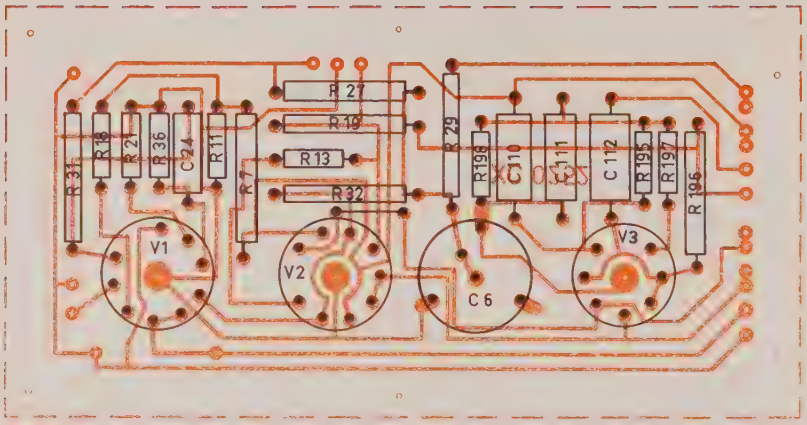
Frequency: 1000 c/s. Adjust the input voltage for an 18 dB deflection on type 2603.

b. FREQ.RESP.SWITCH to curve "A" — Adjust R 98 for an 18 dB deflection on type 2603.

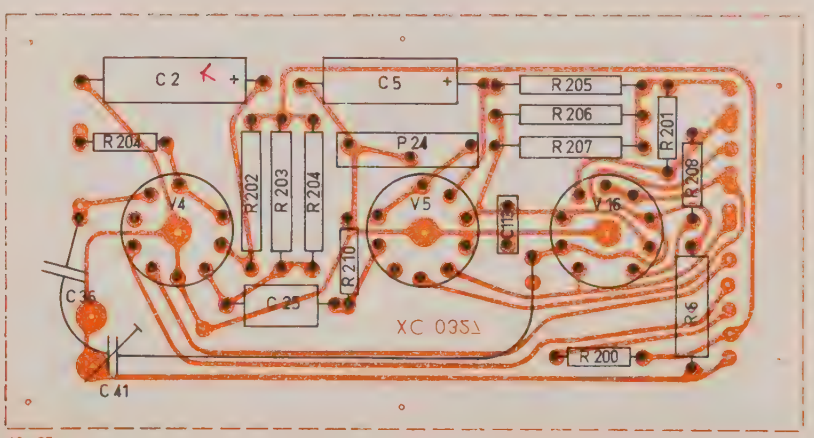
c. FREQ.RESP.SWITCH to curve "B" — Adjust R 97 for an 18 dB deflection on type 2603.

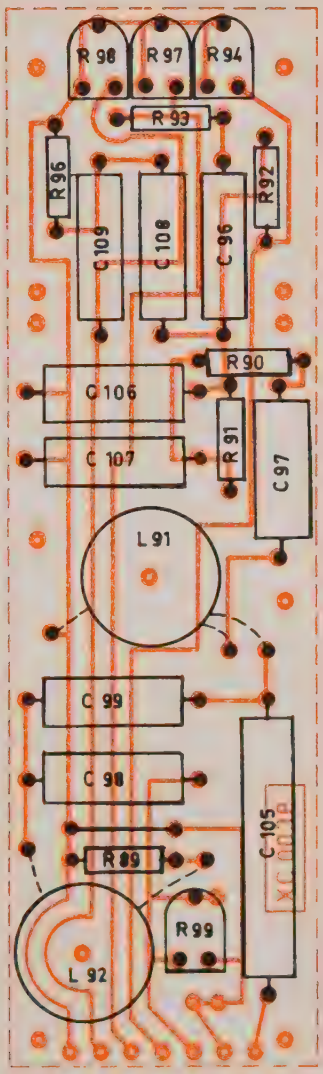
d. FREQ.RESP.SWITCH to curve "C" — Adjust R 94 for an 18 dB deflection on type 2603.


R 4
Q 13
C 18
R 39
C 16
C 28
R 76
R 75
V 13
C 17
C 10
C 11
C 16
R 15
R 64
R 17
C 15
R 28
R 25
P1
V 6
P 4
C 35
R 67
R 69
R 63
R 66
R 65
R 60
C 31
R 22
R 27
C 1
Q 2
Q 1
V 12
C 3
Q 5
V 8
C 34
C 34
C 34
C 34
R 61
R 62
Q 4
V 7
C 7
C 14
R 78
V 14
R 26
C 4



Input Amplifier





Weighting Network

CAPACITORS:

CIRCUIT DIAGRAM REF.	COMPONENT TYPE		STOCK REF.
C 1	Electrolytic	4 µF/250 V	CE 2034
C 2	"	8 µF/350 V	CE 0802
C 3	"	50 µF/ 64 V	CE 0513
C 4	" rev.	24 µF/ 25 V	CE 0412
C 5	"	8 µF/350 V	CE 0802
C 6	"	16 µF/450 V	CE 6846
C 7	"	50 µF/450 V	CE 0907
C 8,9	"	2 x 100 µF/350 V	CE 0804
C 10,11	"	2 x 100 µF/250 V	CE 0707
C 12,13	"	2 x 100 µF/350 V	CE 0804
C 14	"	150 µF/350 V	CE 0803
C 15	"	200 µF/ 6 V	CE 8944
C 16	"	640 µF/ 16 V	CE 0209
C 17	"	2000 µF/ 25 V	CE 0411
C 18,19	"	250 µF/ 25 V	CE 0413
C 21	Ceramic	1 pF/500 V	CK 0100
C 22	Polystyrene	250 pF/500 V	CT 0108
C 23	"	125 pF/500 V	CT 0104
C 24	Polyester	22 nF/400 V	CS 0105
C 25	"	0,1 µF/250 V	CS 0013
C 26	"	56 nF/400 V	CS 0110
C 27	Ceramic	4,7 nF/500 V	CK 3470
C 28	Polyester	0,22 µF/250 V	CS 0017
C 29,30	Paper	0,25 µF/400 V	CP 1722
C 31	Polyester	1 µF/250 V	CS 0025
C 32	Ceramic	1 pF/500 V	CK 0100
C 33	Polyester	68 nF/250 V	CS 0011
C 34	"	2 µF/250 V	CS 0028
C 35	Electrolytic	16 µF/ 63 V	CE 0504
C 36	Ceramic	4,7 pF/500 V	CK 0470
C 40	Trimmer	3 pF	CV 0113
C 41	"		CV 0013
C 42,43	"	6 pF	CV 0112
C 96	Polystyrol 2%	6,3 nF/200 V	CT 3346
C 97,98	" "	63 nF/100 V	CT 3130
C 99	Electrolytic rev.	2 µF/100 V	CE 8927
C 105	"	40 µF/170 V	CE 2038
C 106	Polystyrol 2%	3,15 nF/200 V	CT 3127
C 107-109	"	4 nF/200 V	CT 3325
C 110-112	Polyester	0,1 µF/250 V	CS 0113
C 113	Ceramic	100 pF/400 V	CK 2100

RESISTORS:

CIRCUIT DIAGRAM REF.	COMPONENT TYPE				STOCK REF.
R 2	Wire	5,5 W	10%	330 Ω	RX 0300
R 3	"	"	"	3,3 kΩ	RX 0306
R 4	"	"	"	30 Ω	RX 0309
R 6,7	"	"	"	6,2 kΩ	RX 0303
R 8	Carbon	1 W	"	100 kΩ	
R 9	"	"	"	6,3 kΩ	
R 11	"	1/3 W	5%	56 Ω	
R 12	"	1/2 W	10%	200 Ω	
R 13	"	1/3 W	"	50 Ω	
R 14	"	"	"	800 kΩ	
R 15	"	"	"	160 Ω	
R 17	"	"	"	2,5 kΩ	
R 18	"	"	"	1 kΩ	
R 19	"	1/2 W	"	1,25 kΩ	
R 21	"	1/3 W	"	2,5 kΩ	
R 22	"	1/2 W	5%	86 kΩ	
R 25,26	"	"	10%	31,5 kΩ	
R 27	"	"	"	50 kΩ	
R 28	"	1/3 W	5%	25 kΩ	
R 29	"	1/2 W	10%	100 kΩ	
R 31	"	"	"	315 kΩ	
R 32	"	"	5%	315 kΩ	
R 36	"	1/3 W	10%	3,15 MΩ	
R 38	"	"	5%	125 kΩ	
R 39	Carbon	1/2 W	10%	25 MΩ	
R 41	"	"	0,5%	22,2 Ω	
R 42	"	"	"	200 Ω	
R 43	"	"	"	2 kΩ	
R 44	"	"	"	20 kΩ	
R 45	"	"	"	200 kΩ	
R 46	"	"	"	2 MΩ	
R 47	"	"	"	14,6 kΩ	
R 48	"	"	"	31,5 kΩ	
R 49	"	"	"	100 kΩ	
R 50	"	"	"	315 kΩ	
R 51	"	"	"	1 MΩ	
R 60	"	"	"	2,66 kΩ	
R 61	"	1/3 W	10%	7 kΩ	
R 63	"	1/2 W	0,5%	8,9 kΩ	
R 64	"	1/3 W	10%	6,3 kΩ	
R 65	"	1/2 W	0,5%	17,6 kΩ	
R 66	"	"	"	19,7 kΩ	
R 67	"	"	"	23,7 kΩ	
R 68	"	"	"	34,3 kΩ	
R 69	"	"	"	49 kΩ	
R 70	"	"	10%	10 MΩ	
R 75,76	"	"	"	100 Ω	
R 90,91	"	1/3 W	2%	3,15 kΩ	
R 92	"	"	"	14 kΩ	
R 93	"	"	"	32 kΩ	
R 96	"	"	"	160 kΩ	
R 195	"	"	10%	5 MΩ	
R 196	"	1/2 W	"	50 kΩ	
R 197	"	1/3 W	5%	800 Ω	
R 198	"	"	"	500 Ω	
R 200,201	"	"	10%	5 kΩ	
R 202-207	"	1/2 W	"	160 kΩ	
R 208	"	1/3 W	"	50 Ω	
R 209	"	"	"	400 Ω	
R 210	"	"	"	315 kΩ	

POTENTIOMETERS:

P 1	Ref. Voltage Adj.	50 kΩ	PG 3501
P 2	Sensitivity Cond. Micr.	100 Ω	PQ 1100
P 3	" Ampl. Inp.	100 Ω	PQ 1100
P 4	Polarization Volt. Adj.	50 kΩ	PB 3501
P 5	Input Potentiometer	1 MΩ	PP 5100
P 6	Trimmer	5 kΩ	PG 2500
P 24	"	1 kΩ	PG 2103
P 94	"	150 kΩ	PG 4151
R 97-99	"	300 kΩ	PG 4301

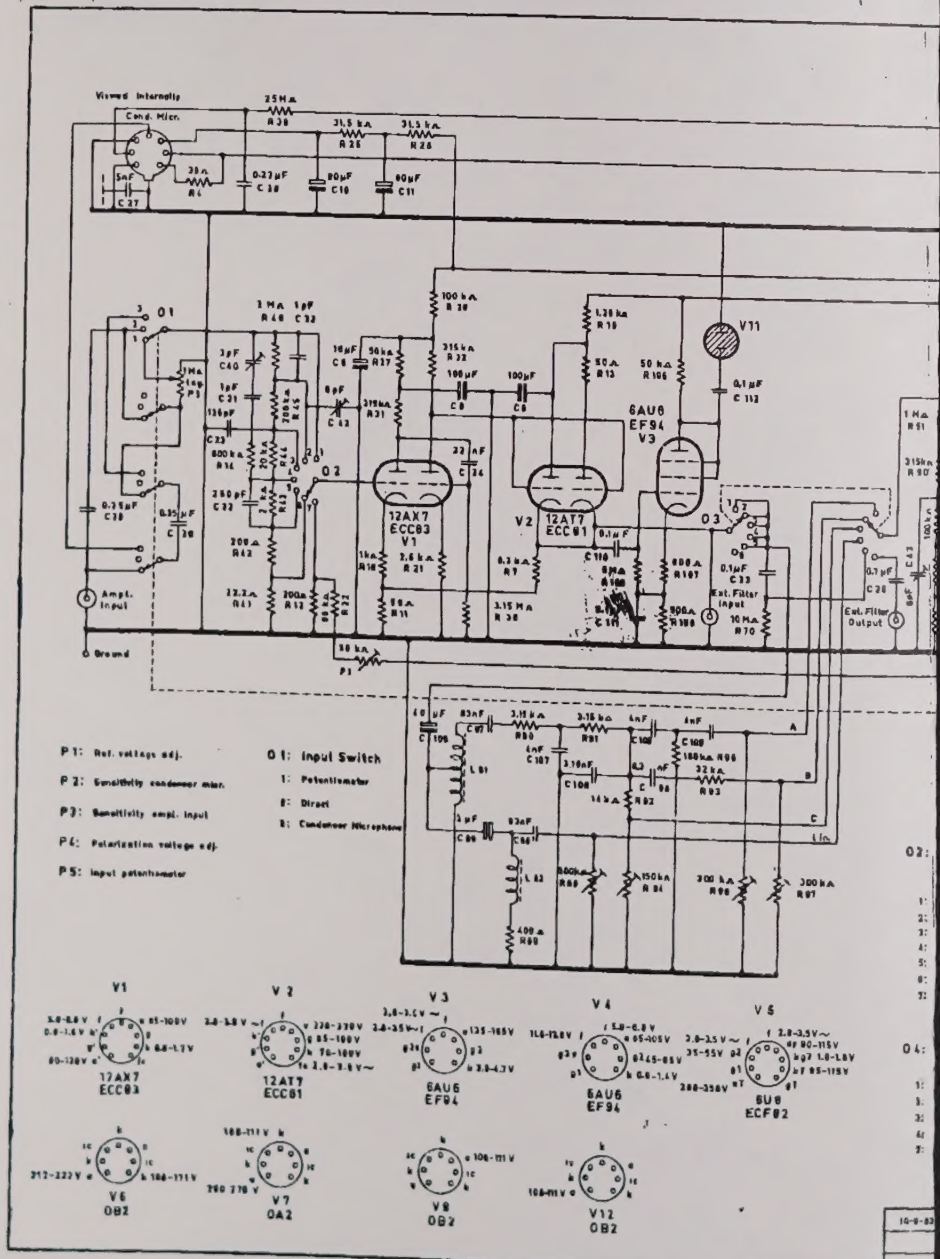
SWITCHES:

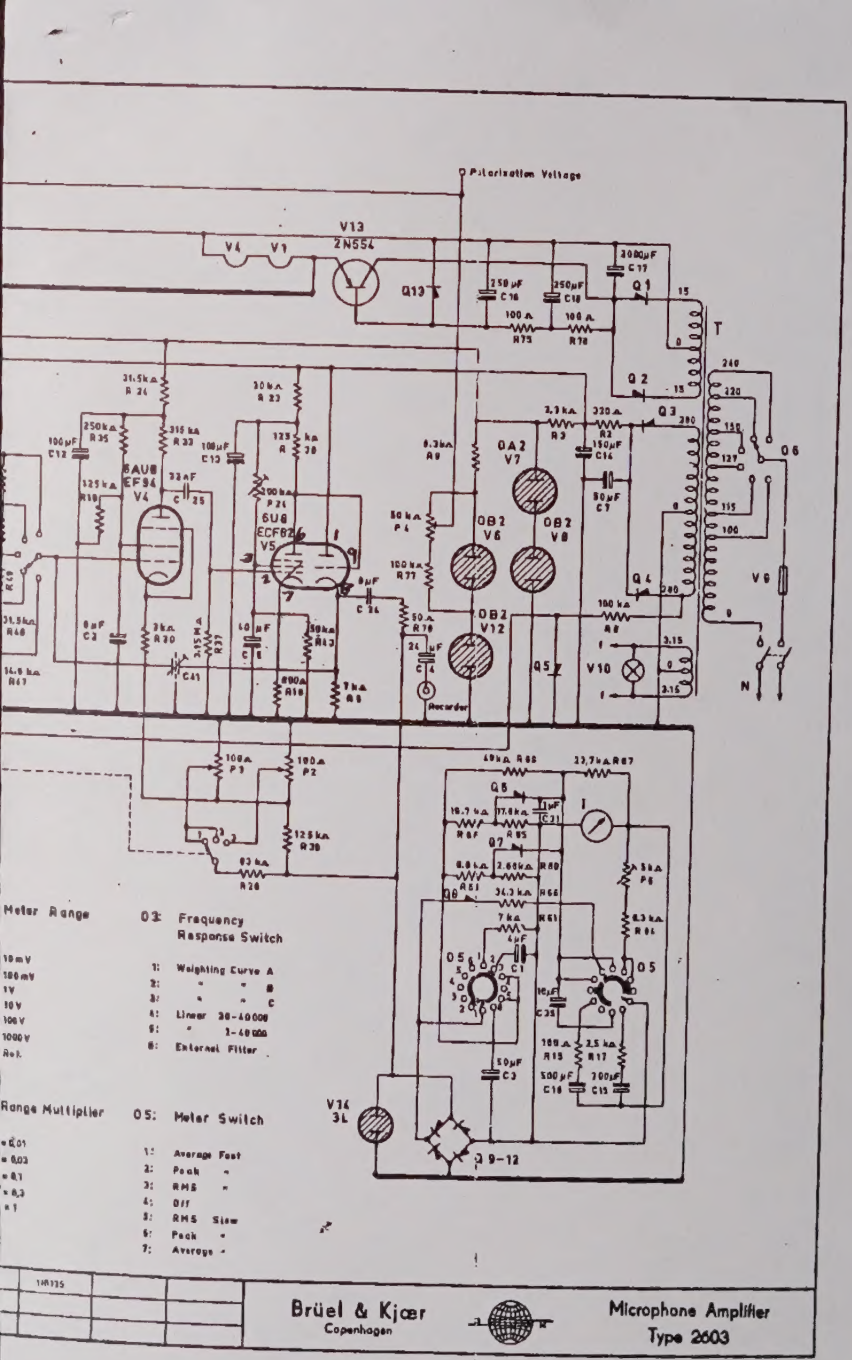
N	Power On-Off	NN 0563
O 1	Input Switch	OR 2603
O 2	Meter Range	OV 2110
O 3	Weighting Network	OT 2603
O 4	Range Multiplier	OT 2109
O 5	Meter Switch	OS 2112
O 6	Power Voltage Selector	OA 0021

RECTIFIERS:

Q 3,4	Silicon	1200 V/0,15 A	QV 0025
Q 5	Zener	6,8 V/ 30mA	QV 1106
Q 6	Germanium	115 V/0,15 A	QV 0085
Q 7	"	45 V/ 0,1 A	QV 0078
Q 8-12	"	115 V/0,15 A	QV 0085
Q 13	Zener	13 V/ 15mA	QV 1316
Q 14,15	Silicon	50 V/ 0,6 A	QV 0501

CIRCUIT DIAGRAM REF.	COMPONENT TYPE		STOCK REF.
TUBES-TRANSISTORS:			
V 1	Twin-triode	ECC83/12AX	VA 0012
V 2	"	ECC81/12AT7	VA 0009
V 3	Pentode	EF94/6AU6	VA 0021
V 4,5	"	EF184/6EJ7	VA 0079
V 6	Stabilizer	OB2	VA 0040
V 7	"	OA2	VA 0037
V 8	"	OB2	VA 0040
V 9	Fuse	1 A	VF 0008
V 10	Dial Lamp	6,3 V/0,5 A	VS 1371
V 11	Neon Lamp	110 V	VS 8001
V 12	Stabilizer	OB 2	VA 0040
V 13	Germanium Trans.	2N554	VB 0023
V 14	Cold Cathode Tube	3L/90 V	VA 0072
V 16	Twin Triode	ECC82/12AU7	VA 0011
PRINTED CIRCUITS:			
	Weighting Network		XC 0036
	Input Amplifier		XC 0252
	Power Supply		XC 0256
	Output Amplifier		XC 0327
	XC 0036 with components		8480063
	XC 0252 "		8012603
	XC 0256 "		8002603
	XC 0327 "		8022603
MISCELLANEOUS:			
	Bakelite Knob, large		SN 0989
	" , small		SN 0814
	Cabinet		KA 0011
L 91	L 91	Filter Coil	LB 0017
L 92	"		LB 0431
	Cover, plastic		KF 0027
	Jack, coaxial		JJ 0013
	" , ground		JT 6204
	" , insulates		JT 8344
	" , microphone		JJ 0016
I	Moving Coil Meter		IM 2604
	Phonefilter		ZS 0017
	Plug, coaxial		JP 0018
	Power Cord EUR		AN 0005
	" USA		AN 0006
T	Power Transformer		TN 0001


Viewed internally
Cond. Micr.
25 MΩ R 30
31.5 kΩ R 25
31.5 kΩ R 26
Snap
28 Ω R1
0.22 µF C 28
80 µF C10
80 µF C11
C 27
S1
1 MΩ R 40
1 pF C 32
3 pF C40
1 pF C 31
136 pF C 23
800 kΩ R 14
20 kΩ R 44
280 kΩ R 43
250 pF C 32
0.75 µF C 29
0.35 µF C 30
Ampl. Input
Ground
200 kΩ R 42
22.2 kΩ R 41
200 Ω R 12
50 Ω R 22
100 kΩ R 20
16 µF C 8
50 kΩ R 17
315 kΩ R 33
100 µF C 9
100 µF C 8
319 kΩ R 31
8 pF C 42
22 nF C 24
1 kΩ R 16
2.6 kΩ R 21
89 Ω R 11
6.3 kΩ R 7
3.15 MΩ R 38
12AX7 ECC83 V1
V2 12AT7 ECC81
1.28 kΩ R 19
50 Ω R 13
50 kΩ R 106
6AU8 EF94 V3
V11
0.1 µF C 112
0.1 µF C 110
800 Ω R 107
800 Ω R 108
0.1 µF C 33
Ext. Filter Input
10 MΩ R 70
Ext. Filter Output
0.1 µF C 28
8 nF C 43
1 MΩ R 91
315 kΩ R 90
100 kΩ R 89
30 kΩ P3
P1
40 µF C 105
83 nF C 85
3.15 kΩ R 83
3.15 kΩ R 81
4 nF C 102
4 nF C 100
4 nF C 107
3.16 nF C 108
150 kΩ R 96
32 kΩ R 93
14 kΩ R 82
L 81
1 µF C 89
93 nF C 86
L 82
800 kΩ R 88
150 kΩ R 84
300 kΩ R 98
300 kΩ R 97
400 Ω R 99
P1: Ref. voltage adj.
P2: Sensitivity condenser micr.
P3: Sensitivity ampl. input
P4: Polarization voltage adj.
P5: Input potentiometer
01: Input Switch
1: Potentiometer
2: Direct
3: Condenser Microphone
V1
17AX7 ECC83
V2
12AT7 ECC81
V3
6AU6 EF94
V4
6AU6 EF94
V5
6U8 ECF82
V6
OB2
V7
0A2
V8
OB2
V12
OB2



1HR335			
		Brüel & Kjær Copenhagen	Microphone Amplifier Type 2603